

DAS SOLUTION FOR SUPERMARKET

CHALLENGE

Certificate of Occupancy (CO) needed to open new supermarket store location on schedule. Public Safety requirements did not pass inspection and were not up to code for emergency communications within building.

SOLUTION

Tested current Public Safety Signal inside and outside the building.

Designed and installed a Distributed Antenna System (DAS) that improves signal strength, network capacity and coverage area within and outside the building.

RESULTS

Installed the new public safety system and delivered testing results within three weeks.

System passed inspection and local fire marshal issued CO for the store to open on schedule.

Created opportunity for future upgrades that support FirstNet interoperability network requirements.



for law enforcement, fire, and emergency medical personnel communications. As a result, this led to the passage of legislation in 2012 to create the First Responder Network Authority (FirstNet) to deploy a dedicated network in all U.S. states and territories, including rural communities and tribal nations.

With the FirstNet, public safety will have a dedicated network that provides highly secure communications accessible only by emergency agencies and personnel. It will deliver specialized features to public safety that are not available on wireless networks today—such as priority access; preemption; more network capacity; and a resilient, hardened connection.

Code requires that buildings have interior and exterior equipment that allows for wireless signals to broadcast from towers to a mobile device (walkie-talkie, smart phone, etc.). Building construction materials inside a building can inhibit transmit/receive signals that first responders need to communicate with each other. A solution was required quickly that would meet the Public Safety System code specifications so that the CO could be issued for the supermarket store to open on schedule.

► CHALLENGE

A large supermarket chain in the Southeast was building a new store. It was nearly complete when the certificate of occupancy (CO) inspection revealed the Public Safety Signal System inside the store was not up to code. The store was scheduled to open in weeks with perishables and other food items in the process of delivery. Any delay in obtaining the CO would result in a loss of inventory and revenue for the supermarket retailer.

The Public Safety System is a vital life safety communications system that allows first responders (fire, law enforcement, and emergency medicine personnel) to communicate with each other during emergencies, natural disasters and other large-scale events. As witnessed during the 9/11 terrorist attacks, law enforcement and firefighters could not communicate with each other due to an overload of activity and a lack of a dedicated network.

The 9/11 Commission Report identified gaps in emergency communications and recommended a nationwide network

► SOLUTION

Today, in natural disasters and at large events, heavy public use can overload wireless communications networks making phone calls and text messaging inaccessible. For public safety personnel, emergency communications are also limited due to the same congestion and capacity issues. A Distributed Antenna System (DAS) solution improves signal strength, network capacity and coverage area to ensure wireless communications can be made in emergency situations.

AFL proposed a DAS solution so that the supermarket chain could obtain a certificate of occupancy and open its new store on time. However, there are Federal, state, city and county laws that each have different requirements that must be met. With red tape to file licenses in all of these jurisdictions, time was of the essence. AFL's Enterprise Services team met with the

COMPONENTS INSTALLED BY AFL:

- ▶ Comba 700/800 Repeater
 - Re-amplifies the wireless signals throughout the building
- ▶ CommScope Coaxial Cable
 - Connects all the devices
- ▶ Transmit/Receive Antennas
 - Relays the wireless signals inside and outside the building

supermarket's project manager and the fire marshal to review options and design a solution. The supermarket only had one month to get this completed before opening.

AFL first conducted testing using approved methods and determined that the Public Safety Signal was insufficient inside the building but was adequate outside the building. This meant that a retransmitted signal from outside could not be received by a first responder inside the building. In the event of a fire or active shooter situation, this could result in injuries or lives lost.

Based on the test results, AFL designed a new DAS solution that ensures constant connection between wireless carriers and cellular devices or emergency radio systems. The DAS solution included amplifiers to boost wireless signals for higher frequencies; repeater antennas on the roof and inside to re-amplify throughout the building; transmit and receive antennas; and coaxial cabling to connect all the devices.

With help from the supermarket project manager and fire marshal, AFL cut through the red tape and obtained necessary licensing and permits from the state, city and county agencies. Then AFL installed all of the DAS equipment and retested the system using the various frequencies and bands used by emergency personnel.

"A Distributed Antenna System (DAS) increases wireless coverage and capacity not only for general venues but also for public safety. AFL delivers in-building RF coverage solutions and consolidated emergency communication systems that meet the real-time, fail-safe needs of first responders, public safety agencies and jurisdictions."

– Dwayne Baucome
Director, WiFi & DAS Solutions, AFL

▶ RESULTS

AFL delivered an in-building RF coverage solution and consolidated emergency communication systems that will meet the real-time, fail-safe needs of first responders, public safety agencies and jurisdictions. By setting up DAS antennas within the building, AFL ensured constant connection between these emergency systems and devices as well as wireless carriers and their customers.

With the DAS solution, AFL installed the public safety system and delivered testing results within three weeks and prevented any delays in the opening of the new supermarket. The customer passed inspection and obtained approval for the CO from the Fire Marshal. This system will allow public safety and emergency personnel to communicate within the store during emergencies. Additionally, the system supports current and future public safety frequencies to meet the FirstNet mission of a nationwide interoperable network.

▶ ABOUT AFL

Founded in 1984, AFL is an international manufacturer providing end-to-end solutions to the energy, service provider, enterprise and industrial markets as well as several emerging markets with products in use in over 130 countries.

AFL also offers a wide variety of services supporting data center, enterprise, wireless and outside plant applications as well as specialty services of AV, security, paging and WiFi through its Enterprise Services division. For more information, visit www.AFLglobal.com.